originates in the passage of the moderately enlarged white cells through the relaxed walls of the dilated bloodvessels. I have convinced myself by direct observation of the perfect accuracy of the statements of Cohnheim, though they are still contested by some investigators, and have elsewhere, though undoubtedly with another another object in view, furnished a sketch of my own.[1] Alcohol induces dilatation of the capillaries of various regions of the body, but especially of those of the head, with great precision and certainty. And perhaps it may even be said that it causes dilatation of the capillaries throughout the body. If now there be already present a strong tendency to the formation of pus, it may be materially favoured by the administration of alcohol. We may, perhaps, be allowed to attribute the injurious effects which now and again have been observed to follow the employment of alcohol to these actions. Alcohol holds a secondary position as an antipyretic as compared with quinia, because the latter does not possess these disadvantages.[2]

"It remains for us still to consider to what causes we are to attribute the refrigerating influence of alcohol, and there appear to be three possibilities: that it may operate upon the nervous system; that it may act on the means which the system possesses of regulating its temperature by the perspiration; or, lastly, that it may exert its influence directly on the oxidizing processes which take place in the juices. After all that has been said upon the subject, it is the last action which seems to be by far the most probable.[3]

"Further and more extended series of experiments, which have already been commenced, will, we hope, enable this question to be decided."

2. *Absorption of Nutritive Substances introduced into the Subcutaneous Cellular Tissue.*—MENZEL and PERCO (*Wien. Med. Wochenschr.* 1869, No. 31) injected beneath the skin various kinds of nutritive matters, in a fluid state, with the intent to determine whether they would be absorbed. At first, fatty substances—almond oil, olive oil, train oil, and the like—were injected into the subcutaneous tissue of dogs, beginning with one drachm and increasing gradually to one ounce. Though fatty substances were found to be less readily absorbed than other forms of fluid aliment, yet finally they also were entirely taken up. At the end of, at the furthest, forty-eight hours, no trace of them was discoverable. Milk, the yelk of a fresh egg, and dissolved sugar were more quickly absorbed. The subcutaneous injection of fatty substances in the human subject gave rise to no serious local symptoms, nor to any serious disturbance of the general system.—*Centralblatt.f. d. Med. Wissenschaft.*, June, 1869. D. F. C.

3. *Some Previously Undescribed Tetanic Symptoms produced by Atropia in Cold-blooded Animals.*—Dr. THOMAS R. FRASER, while making a series of experiments to determine the minimum fatal dose of atropia for frogs, was surprised to find that increased reflex excitability, convulsions, and tetanus occurred, occasionally, at a certain stage in the poisoning. Believing that a careful examination of these symptoms might probably serve to throw some light on the causation of several of the complicated effects of a substance that has long occupied an important position as a therapeutic agent, he made a number of experiments to determine, accurately, the characters of these convulsive effects; to ascertain the dose necessary for their production; to differentiate, as far as possible, the structures on whose affection they depend; and to harmonize these symptoms with analogous effects in warm-blooded animals, and explain their appearance in special circumstances only, in both frogs and mammals.

The following are the principal results of his researches:—

1. Atropia produces in frogs well-marked convulsant and tetanic symptoms,

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[1] Experimentelle Untersuchungen über das Wesen der Chininwirkung (Experimental Inquiry into the Mode of Operation of Quinia). Berlin: A. Hirschwald, 1868.

[2] Pharmacologische Studien über Chinin. Virchow's Archiv, 1869, Bd. xlvi. p. 139.

[3] Cf. G. Harley on the Influence of Physical and Chemical Agents upon the Blood and the Respiratory Gases: Philosophical Trans. 1865, ii. p. 717.

which when present in an extreme degree form a separate stage in the poisoning succeeding that of paralysis.

2. Tetanic symptoms follow the subcutaneous administration of a dose of sulphate or acetate of atropia, equivalent to the $\frac{1}{1000}$th of the weight of the frog, and of doses a little greater and less than this.

3. These symptoms are due to a direct action of atropia on the *medulla oblongata* and *spinalis*.

4. The differences in the paralyzing and convulsant symptoms that occur in frogs and in various mammals may be explained by the greater susceptibility of the former to the action of a paralyzing agent, and by the amount of paralyzing being greater than the amount of spinal-stimulant action in atropia.

5. The different symptoms that are produced by different doses of atropia in animals of the same species may be explained by its paralyzing being greater than its convulsant action.

6. The paralyzing and convulsant actions of atropia can be imitated in both frogs and mammals by a combination of a paralyzing with a convulsant substance.—*Journ. of Anat. and Physiology*, May, 1869.

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4. *Variation in the Amount of Water in Brain in both Sexes, at Different Ages and in Various Diseases.*—A. Weisbach, describes (*Wien. Med. Jahrbuch.* xvi.) the results of researches in elucidation of this subject, based upon the examination of 206 brains. From each brain 6 portions were taken—carefully weighed, and then fully dried by the aid of a hot water bath. The percentage of the loss in weight after drying being assumed as an indication of the amount of water existing normally in the portion of brain examined.

The portions of brain removed for examination were from the *cerebrum*, three; namely, 1, from the medullary matter; 2, from the external gray matter; and 3, from the external convolutions. Three portions were taken from the cerebellum, viz.: 1, from the posterior lobe; and 2, from the pons and medulla oblongata. Of the brains examined, 130 were of the male sex; of whom, 64 were from 20 to 30 years of age; 16, from 30 to 50; 28, from 50 to 70; and 22, from 70 to 94. All parts of the cerebrum and cerebellum gave with increase of age an increased amount of watery contents. In the medullary substance, it is true, as well as in the lesser brain, this increase occurred subsequently to a decrease which was observed between the age of 30 and 40 years. The pons and medulla oblongata were found to contain the largest amount of water in early manhood, from which period to the 70th year it gradually diminished; it then increased, and reached an amount beyond that present at any period of life between 30 and 70, yet not greater than what was present at a still earlier period. In another series of investigations "On the Proportionate Weight of the Brain in the People of Austria," (*Arch. f. Anthrop.* 1866) M. Weisbach has shown that the weight of the brain is continually decreasing from the age of 20 to 90 years; therefore, while the solid portion of the brain is constantly suffering diminution from the 20th year of age onwards, there occurs a contrary movement in respect to the quantity of water contained in it.

The brains of 64 females were examined: 17, of subjects between 20 and 30 years of age; 5, of such as were between 30 and 50 years; 20, of such as were between 50 and 70 years; and 22, of such as were between 70 and 92 years. All parts of the cerebrum exhibited the same amount of water in the elder and younger subjects; nevertheless, the quantity of water in all the brains was not precisely the same at all times in different subjects during the same periods of life. In the cerebellum, the quantity of water was found constantly to diminish up to the age of 60, but after 70, it augmented; so that the brains of females advanced in years were found to contain usually the largest amount of water. When, in the brains of the aged it was found to be decreased, it was chiefly in the medullary matter of the posterior lobes, the pons and medulla oblongata, as in the brains of subjects of 20 years of age; but, at the same time, these portions of brain contained more water than they did in the brains of subjects between 30 and 70 years of age. A comparison of the results thus far detailed in respect to the comparative amount of water contained in the brains of the two sexes, will show that, in general, the brain of the female,